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FEDERAL - STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for

Montana and Northern Wyoming
Upper Missouri, Upper Columbia and Yellowstone Rivers

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

In cooperation with the U. S. Forest Service, U. S. Geological Survey, National Park Service, U. S. Bureau of Reclamation, State Engineers of Montana and Wyoming and other Federal, State and local organizations.

As of
MAY 1, 1951

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FEDERAL-STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA and NORTHERN WYOMING

Upper Missouri and Upper Columbia River Basins

Report Prepared
by

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Division of Irrigation
Soil Conservation Service

and

Montana Agricultural Experiment Station
Bozeman, Montana

IRRIGATION WATER SUPPLY OUTLOOK
MAY 1, 1951

May 1 snow surveys on the headwaters of the Columbia and Missouri Rivers in Montana indicate an ample supply for irrigation on those streams with reservoir control. Other streams may run short during the latter part of the season.

Similar conditions prevail in Northern Wyoming in the Big Horn, Shoshone and Wind River drainage basins.

Storage reservoirs, filled to capacity are assured by the end of the snowmelt season.

Stream flow has generally been above average since October.

Valley precipitation has been above average west of the continental divide in Montana; but east of the divide extending into eastern Montana and Northern Wyoming, precipitation has been below average and is seriously effecting those areas depending upon precipitation for wheat and other dry farming crops.

The seasonal forecast of various streams are tabulated on the following page.

MAY 1, 1951

PRELIMINARY ESTIMATES OF RUNOFF OF REPRESENTATIVE STREAM GAGE STATIONS IN MONTANA AND NORTHERN WYOMING

NAME OF STREAM AND STATION	May-June	July-Aug. Sept.	May-Sept.	Percent Average
MISSOURI BASIN	FORECAST IN ACRE FEET			
Gallatin River at Gateway	267,600	192,400	460,000	123
Gallatin River at Logan	256,000	180,000	455,000	110
Madison River at West Yellowstone	101,000	76,000	177,000	116
Hyalite Creek at Ranger Station	20,400	11,200	31,600	102
No. Fk. Musselshell at Delphine	1,400	1,000	2,400	109
Judith River near Utica	22,570	8,600	30,580	82
Yellowstone River at Corwin Springs	1,050,000	720,000	1,770,000	107
Big Hole River at Melrose	567,200	223,400	790,600	138
Missouri River at Fort Benton	2,025,000	1,050,000	3,075,000	110
LOWER YELLOWSTONE RIVER (WYOMING)	April-June		April-Sept.	
No. Fk. Popo Agie River near Lander	47,500		60,960	111
Wind River at Riverton	352,300		670,000	140
Shoshone River below Buffalo Bill	574,800		1,037,000	130
Middle Fork Powder near Kaycee	66,430		75,150	102
Tongue River near Dayton	92,250		119,580	98
Tongue River at Acme	234,000		285,000	115
Goose Creek near Sheridan	48,210		58,470	85
UPPER COLUMBIA RIVER BASIN				
Bitterroot River at Darby	422,000		520,000	125
Clark Fork above Missoula	1,600,000		1,720,000	134
Clark Fork below Missoula	2,700,000		3,140,000	132
Clark Fork at St. Regis	3,520,000		4,150,000	125
Flathead River at Columbia Falls	6,100,000		7,200,000	157
Flathead River at Polson	6,200,000		7,800,000	153
Clark Fork River at Plains	8,700,000		12,300,000	147
Clark Fork River at Heron	11,000,000		14,100,000	139

Note: Probable Error for these forecast is plus or minus 10 to 15% of the forecast value. Values of (r) range from 0.720 to 0.983.

The Beaverhead River above Dillon will flow a little below average this season. Below Dillon, to Sappington, it is anticipated that the flow will be above average and probably greater than last season.

The Madison River into Hebegen Reservoir should flow approximately 177,000 acre feet from May through September, or 16 percent above average. This flow should be ample to bring the reservoir to capacity by the end of the Snow Melt Season.

The Gallatin River at Gateway will flow about 460,000 acre feet during the May-September season with about two-thirds of this volume coming by the end of June, which will leave the usual August-September shortage due to the lack of storage facilities for peak flows.

The Missouri River Main Stem from Three Forks to Fort Benton should flow slightly above average. The average flow, May through September, being 2,796,000 acre feet. The forecast is for 3,075,000 acre feet.

The Sun, Teton, and Marias Rivers should flow very close to normal for the irrigation season.

The Upper Yellowstone River at Corwin Springs, below Gardiner, will flow about 7% above average during the May-September season, or close to 1,770,000 acre feet; the average for this period being 1,665,000 acre feet.

Snow measurements on the Wind River above Riverton, Wyoming, indicate an abundant water supply from that basin this season. The forecast for this river at Riverton is 670,000 acre feet for the period April-September, or 140 percent above. Heavy rains would augment this flow considerably. Warm temperature, followed by excessive rain, could cause considerable damage from extremely high flows.

The snow cover on the Pop Agie River Basin is not as high in proportion to the average as the Wind River. This river should flow about ten percent above average. A good supply of water is anticipated for this season.

On the Shoshone River, below Buffalo Bill Reservoir, the flow for April-September will be approximately 1,037,000, or 140 percent of average for that period. This volume should assure ample water for irrigation and power demands during the season.

The Tongue and Powder Rivers in Wyoming will flow approximately normal during the season and should produce more water than last season. Snow surveys last season were low, about 60% of normal. This year, the water content in the snow indicates about 100 to 115% of average which should produce a good water supply this season.

UPPER COLUMBIA RIVER WATER SUPPLY OUTLOOK

May 1 snow survey on the upper Kootenai indicates a water supply of 10 to 30 percent above average. The snow pack is not as heavy as last season, which averages close to 150% of normal.

May 1 water content measurements made on the Flathead River Basin have increased slightly during the month of April. It is anticipated that the water supply during April-September at Columbia Falls, will be approximately 7,200,000 acre feet, with about 6,100,000 passing Columbia Falls during April and June.

May 1 measurements in the entire Columbia River Basin were hampered by a large storm which occurred on April 29-30, which added materially to the snow pack in the high elevations but would disappear very rapidly in the lower regions of the river basin.

The Upper Clark Fork River Basin was effected by this April 29-30 storm and has increased the percentage figures in low elevations out of proportion. It is believed that the April water content measurements will be more in line with perspective flows than are the May measurements. For the reason stated above, the forecast issued on April 1 are still being used as the May 1 forecast.

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U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
H. H. Bennett, Chief

DIVISION OF RESEARCH
M. L. Nichols, Chief
Washington, D. C.

MONTANA AND NORTHERN WYOMING SNOW SURVEY COURSES

LEGEND
- TOWNS AND CITIES
- 13D4 SNOW SURVEY COURSE
- (14) IDAHO & WYOMING NUMBERS
- STREAM GAGING STATIONS

JANUARY 1950

DIVISION OF IRRIGATION BOZEMAN MONTANA

SCALE IN MILES 50 25 0 50 100

REPRODUCED BY THE SOIL CONSERVATION SERVICE, CARTOGRAPHIC DIVISION, LINCOLN, NEBR. SR, 11484

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

Drainage Basin and Course Name	Montana Number	Location: Elev.	Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
Missouri River Drainage								
JEFFERS M RIVER (ROCK-CREEK-BEAVERHEAD)								
Lakeview Ridge	11E3	7400	27	11S	2W	1948	3,4,5	9
Lakeview Canyon	11E4	6930	26	11S	2W	1948	3,4,5	9
Limekiln	11E2	6950	15	5S	9W	1948	3,4	1
White Pine Ridge (BOULDER PRAIRIE)	11E1	6650	16	11S	9W	1948	3,4	1
Bobby Dick	13D10	7000	12	8S	10W	1948	3,4	1
Cold Stone	13D9	8100	11	8S	10W	1948	3,4	1
Lemhi Pass	13E1	7400	9	10S	15W	1948	3,4	1
Merrell Creek	13D12	6650	14	9S	15W	1948	3,4	1
Trail Creek	13E2	7090	15	10S	15W	1948	3,4	1
Silver Junction (BIG HOLE)	13D11	6800	27	8S	15W	1948	3,4	1
Big Hole Pass	13D3	7400	28	3S	18W	1948	3,4	1
Big Hole Pass(Below)	13D4	6900	24	3S	18W	1948	3,4	1
East Boundary	13D5	6700	22	3S	17W	1948	3,4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	2,3,4,5	1,2
Jackie Creek	13D8	7350	25	7S	16W	1948	3,4	1
Miner Forks	13D6	7300	24	6S	17W	1948	3,4	1
Miner Lake (WISE RIVER)	13D7	6720	10	6S	16W	1945	3,4,5	1
Anderson Mdw.	13D14	7000	18	3S	12W	1948	3,4	1
Elk Horn	13D15	8450	15	4S	12W	1934	3,4,5	2
Wise River	13D13	6300	15	2S	12W	1948	3,4	1
(RUBY RIVER)								
Cottonwood	11E2	5900	24	10S	3W	1948	3,4	1
Cottonwood (Upper)	11E1	8400	30	10S	2W	1948	3,4	1
Flashlight	12D3	6950	22	8S	7W	1945	3,4,5	1
Tobacco Root	12D2	6900	13	4S	3W	1948	3,4	1
Vigilante	11D1	6125	28	9S	3W	1948	3,4	1
MADISON RIVER								
Hebgen	11E5	6550	22	11S	3E	1934	1,2,3,4,5	2
West Yellowstone	11E7	6700	34	13S	5E	1934	1,2,3,4,5	2
Norris Basin	10E2	7500	44°-44'		110°-42'	1935	3,4	5,6
GALLATIN RIVER								
Devil's Slide	10D4	8100	14	5S	6E	1935	3,4,5	2,6
Hood Meadow	10D3	6600	22	4S	6E	1934	3,4,5	2,6
Mystic Lake	10D2	6600	30	3S	7E	1935	2,3,4	6,7
New World	10D1	6700	24	3S	6E	1939	2,3,4,5	6,7
21-Mile	11E6	7150	1	11S	5E	1934	1,2,3,4,5	2
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	2
Crystal Lake	9C1	6100	24	12N	17E	1941	3,4	1
Grasshopper	10C2	7000	19	9N	8E	1938	3,4	1
Kings Hill	10C1	7950	35	13N	7E	1937	3,4,5	2
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,4	3
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Stemple Pass	12C1	6900	10	13N	7W	1934	3,4,5	2
Tenmile Creek,Lower	12C2	6250	13	8N	6W	1935	1,2,3,4,5	2
Tenmile Creek,Middle	12C3	6800	13	8N	6W	1934	1,2,3,4,5	2
Tenmile Creek,Upper	12C4	8000	19	8N	5W	1935	1,2,3,4,5	2
(TETON RIVER)								
Bright Creek	12A1	6000	13	26N	10W	1948	3,4	1
Waldron Creek	12B2	5900	10	25N	9W	1948	3,4	1
West Fork	12B1	6000	6	25N	9W	1948	3,4	1
(SUN RIVER)								
Bench Mark	12B8	5500	9	20N	10W	1948	3,4	1
Cabin Creek	12B6	5400	33	23N	10W	1949	3,4	1
S-Bull	12B9	5600	30	20N	10W	1948	3,4	1
Gates Park	12B5	5300	31	24N	10W	1949	3,4	1
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	2
My Lake	13B9	7300	21	23N	12W	1950	3,4	1
Wrong Creek Ridge	12B3	6800	17	25N	10W	1949	3,4	1
Wrong Creek (MARIAS RIVER)	12B4	5700	32	25N	10W	1949	3,4	1
Marias Pass	13A5	5250	34	30N	14W	1936	1,2,3,4,5	2
Snow Lab. #10	13A9	5200	15	29N	14W	1947	1,2,3,4,5	2
(MILK RIVER)								
Rocky Boy (MUSSELSHELL RIVER)	9A1	5200	15	28N	10E	1941	3,4	7
Grasshopper	10C3	7000	19	9N	8E	1938	3,4	1
UPPER YELLOWSTONE								
Camp Senia	9D1	7890	2	8S	18E	1937	4	1
Canyon	10E3	7750	44°-44'		110°-30'	1938	1,2,3,4,5	Pd.Obs.
Cooke City	10D7	7400	25	9S	14E	1937	1,2,3,4,5	5
Crevice Mt.	10D5	8400	29	9S	9E	1935	3,4	1
Independence	10D6	8000	22	7S	12E	1941	3,4	Pd.Obs.
Lake Camp	10E4	7850	44°-34'		110°-24'	1937	1,2,3,4,5	Pd.Obs.
Lodgepole (Wyo.)	9E1	8200	32	56N	106W	1940	4,5	1
Lupine Creek (SHIELDS RIVER)	10E1	7300	44°-54'		110°-37'	1938	1,2,3,4,5	5
Porcupine	10C3	6500	10	4N	10E	1938	3,4	1
LOWER YELLOWSTONE (WIND RIVER) WYO.								
Brooks Lake #3	10F2	9200	23	44N	110W	1939	2,3,4,5	Pd.Obs.
Burroughs Creek	9F6	8800	15	43N	107W	1948	2,3,4,5	Pd.Obs.
Dinwoodie	9F10	10000	9	38N	105W	1948	2,3,4,5	Pd.Obs.
Dry Creek	9F9	9500	34	4N	105W	1948	2,3,4,5	Pd.Obs.
DuNoir	9F2	8750	27	42N	108W	1940	2,3,4,5	Pd.Obs.
Geyser Creek	9F3	8500	12	41N	108W	1948	2,3,4,5	Pd.Obs.
Hobbs Park	9G2	10000	22	2S	3W	1948	2,3,4,5	Pd.Obs.
Little Warm	9F4	9500	24	41N	108W	1948	2,3,4,5	Pd.Obs.
Mosquito Fork R.S.	9G3	9500	23	2S	3W	1940	2,3,4,5	Pd.Obs.
Sheridan R. S.	9F1	7500	3	42N	109W	1939	2,3,4,5	1
St.Lawrence R.S.	9F11	9000	26	1N	4W	1940	2,3,4,5	Pd.Obs.
T-Cross Ranch	9F5	8000	1	43N	107W	1940	2,3,4,5	Pd.Obs.
Trout Creek	9G1	8400	5	2S	2W	1948	2,3,4,5	Pd.Obs.
Togwotee Pass (SNAKE RIVER) WYO.	10F1	9600	29	44N	110W	1936	2,3,4,5	10
Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,4,5	1
Grannier Meadows	8G4	9000	19	30N	100W	1936	2,3,4,5	1
Larson Creek	9G4	9000	12	30N	103W	1948	3,4,5	1
Sawmill Glade	8G1	8500	3	31N	101W	1939	2,3,4,5	1
South Pass	8G3	9000	13	30N	101W	1939	2,3,4,5	1
BIG HORN RIVER WY.								
Beavers Hill	9F5	8900	6	43N	102W	1948	2,3,4,5	Pd.Obs.
Owl Creek	8F1	8700	30	43N	101W	1948	2,3,4,5	Pd.Obs.
Tensleep R.S.	7E3	8300	30	49N	8ow	1935	4,5	1
Timber Creek	9E2	8600	25	47N	103W	1948	4,5	1
Ranger Creek	7E1	8800	32	53N	86W	1935	4,5	1
Wood River	9F7	8000	28	46N	103W	1939	2,3,4,5	1
(SHOSHONE RIVER) WYO.								
East Entrance	10E6	7000	17	52N	109W	1948	1,2,3,4,5	5
Sylvan Pass	10E5	7100	12	52N	110W	1930	1,2,3,4,5	5
TONGUE RIVER WYO.								
Big Goose	7E2	7700	4	53N	86W	1935	4,5	1
POWDER RIVER WYO.								
Red Fork	7E1	7000	18	43N	85W	1936	4,5	Pd.Obs.
Sour Dough	6E1	8500	17	49N	8LW	1936	4,5	1
Columbia River Basin								
KOOTENAI RIVER								
Baree Mountain	15B1	6000	1	25N	31W	1937	4,5	1
Blue Bird Basin	14A1	6800	24	37N	26W	1937	4,5	1
Brush Creek	14A4	5000	13	30N	18W	1941	3,4	1
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5	1
FLATHEAD RIVER								
Big Creek	13B3	6750	6&7	22N	18W	1941	4,5	4
Brush Creek	14A4	5000	13	30N	26W	1937	3,4	1
Cattle Queen	13A1	4700	7	35N	17W	1939	3,4	5
Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5	1
Elk Mountain	13B4	6750	1	20N	19W	1941	3,4	4
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	2
Hell Roaring Divide	14A3	5770	35	32N	22W	1942	4,5	1
Kishenehn	14A2	4300	7	37N	21W	1946	4,5	5
Limestone Pass	13B8	7000	34	17N	15W	1948	3,4	1
Logan Creek	14A5	4300	34	30N	24W	1937	3,4	1
Marias Pass	13A5	5250	34	30N	14W	1934	1,2,3,4,5	2
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4	4
Rainy Lake	13B6	4300	11	18N	16W	1947	3,4,5	1
Snow Lab. # 16	13A9	5200	15	29N	14W	1946	1,2,3,4,5	2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	3,4	1
Strawberry Lake	13B10	6500	11	28N	19W	1948	3,4	1
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4	1
Trout Lake	13B11	3600	21	28N	17W	1948	3,4	1
Upper Holland Lake	13B5	7000	28	20N	16W	1948	3,4	1
UPPER CLARK FORK								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	2
East Fork Ranger Stn	13D1	5400	16	2N	17W	1937	4	1
El Dorado Mine	13C9	7800	23	8N	12W	1946	4	11
Gold Creek Lake	13C8	7200	14	8N	12W	1946	4	11
Intergaard	13C4	6450	6	5N	13W	1939	2,3,4	3
North Fork Jocko	13B7	6330	3	17N	17W	1941	3,4	4
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,4	3
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Rainy Lake	13B6	4300	11	18N	16W	1947	3,4,5	1
Skalkaho Summit	13C3	7258	30	6N	17W	1937	4	1
Slide Rock Mountain	13C2	7100	26	10N	16W	1937	4	1
Southern Cross	13C5	6500	9	5N	13W	1939	2,3,4	3
Stemple Pass	13C1	6900	16	13N	7W	1934	3,4,5	2
Storm Lake No. 2	12C7	7780	19	4N	13W	1939	4	1
Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,4	3
Stuart Mountain #1	13C1	7400	6	4N	18W	1936	4	1
Tenmile Creek,Lower	12C2	6250	13	8N	6W	1935	1,2,3,4,5	2
Tenmile Creek,Middle	12C3	6800	13	8N	6W	1935	1,2,3,4,5	2
Tenmile Creek,Upper	12C4	8000	19	8N	5W	1935	1,2,3,4,5	2
PEND OREILLE RIVER								
Baree Mountain	13B1	6000	1	25N	31W	1937	4,5	1
Freezeout Summit	15C3	7000	21	15N	27W	1937	4	1
Hoodoo Creek	13C1	6200	9&16	14N	27W	1937	4	1
BITTERROOT RIVER								
East Fork R. S.	13D1	5400	10	2N	17W	1937	4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	2,3,4,5	1
Mud Creek Pasture	14C1	4500	24	11N	24W	1937	3	1
Nezperce Camp	14D2	5580	19&20	1S	23W	1937	4	1
Nezperce Pase	14D1	6575	32	28N	16E	1937	4	1
Skalkaho Summit	13C3	7259	30	6N	17W	1937	4	1
Stuart Mountain #1	13C1	7400	6	4N	18W	1936	4	1
Saskatchewan River Basin								
ST. MARY RIVER								
Iceberg Lake	13A3	6000	48°-50'		113°-12'	1922	5	2,8
Piegan Pass # 4	13A4	5000	48°-46'		113°-10'	1922	5	2,8
Piegan Pass # 6	13A6	6500	48°-45'		113°-12'	1922	5	2,8
Mount Allen # 7	13A7	7000	48°-44'		113°-10'	1922	5	2,8
Ptarmigan # 8	13A8	5800	48°-50'		113°-12'	1922	5	2,8

a. Numerals 1,2,3,4, and 5 refer to January 1, February 1, March 1, April 1, and May 1.

b. Numerals refer to Agency that secures the snow survey as follows:

1. U. S. Forest Service
2. U. S. Geological Survey and U. S. Engineer Corps
3. Montana Power Company
4. U. S. Indian Service
5. National Park Service
6. Montana Experiment Station
7. City of Bozeman
8. Dominion Water and Power Bureau
9. U. S. Fish and Wildlife Service
10. U. S. Bureau of Reclamation
11. Deerlodge Citizens Committee

Pd. Obs. Paid Observer by Soil Conservation Service

SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES IN ADJACENT BASINS, USED IN THIS REPORT AND SHOWN ON THE INDEX MAP

DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measurement Dates	Measured By
JEFFERSON	Idaho								
Kilgore	10	11E12	6200	6	12N	39E	1937	1,2,3,4,5	pd.obs.
Blue Ridge Mine	5	11E11	6700	27	13N	38E	1938	4	pd.obs.
Camp Creek	6	12E3	6800	21	13N	36E	1936	1,2,3,4	1
Moose Creek	8	13D16	6200	22-27	27N	21E	1937	3,4,5	1
Big Springs	3	11E9	6500	34	19N	44E	1936	1,2,3,4,5	10
Island Park	9	11E10	3600	28	13N	43E	1936	1,2,3,4,5	10
Valley View	17	11E8	6500	7	15N	44E	1936	1,2,3,4	10
UPPER YELLOWSTONE	Wyo.								
Lewis Lake Div.	9	10E9	7900	44-13		110-40	1919	1,2,3,4	10
Aster Creek	2	10E8	7700	44-17		110-37	1919	1,2,3,4	10
Tom Thumb Summit		10E7	7900	44-22		110-35	1949	3,4	10
LOWER YELLOWSTONE (Wind River)	Wyo.								
Togwotee Pass	12	10F1	9600	29	44N	110W	1936	2,3,4,5	10
Kendall	25	9F12	7900	23	38N	110W	1936	3,4,5	1
Loomis Park	26	10F4	8500	14	37N	111W	1942	3,4,5	1
Yellow Jacket	14	10F5	6775	33	42N	112W	1936	3,4,5	1
Black Rock	2	10F3	8600	4	44N	111W	1936	2, 4	10
Dutch Joe	23	9G6	8700	32	31N	104W	1936	4,5	1
Mulligan Park	24	9G5	8900	17	35N	108W	1936	3,4,5	1
KOOTENAI	Idaho								
Smith Creek	13	16A1	4800	29	64N	3W	1937	4,5	1
	Canada								
Fernie	10		3500	49-31		115-01	1939		
New Fernie	10A		4100						
Gray Creek	34		5100	39-37		116-41	1948		
Marble Canyon	32		5000	51-12		116-09	1947		
Nelson Creek	19		3050	44-25		117-14	1938		
Sinclair Pass	8A		4500	50-40		115-58	1947		
Sullivan Mine	20A		5100	49-43		116-01	1945		
Upper Elk River	41		4400	50-01		114-56	1947		
Kimberly	20		3800	49-41		115-59	1945		
UPPER CLARK FORK	Idaho								
49 Meadows	1	15B10	5000	6	43N	5E	1937	1,2,3,4,5	1
Lookout	10	15B2	5250	4	47N	6E	1921	1,2,3,4,5	1
Above Roland	2	15B7	4350	35	47N	6E	1926	3	12*
Below Roland	3	15B6	3770	34	47N	6E	1926	3	12
Sunset	16	15B9	5600	28	49N	5E	1921	3	12
PEND OREILLE	Idaho								
Mosquito Ridge	9	16A4	5110	5	54N	2E	1937	4,5	1
Freezeout #2		15B10	6800	21	15N	27W	1951	3,4	1

SUPPLEMENTAL INDEX LIST OF SNOW SURVEY COURSES IN ADJACENT BASINS, USED IN THIS REPORT AND SHOWN ON THE INDEX MAP

DRAINAGE AND SNOW COURSE	Adj. State No.	Montana Number	Elev. Feet	Section Lat.	Twp	Range Long.	Record Began	Measurement Dates	Measured By
BITTERROOT	Idaho								
Moose Creek	8	13D16	6200	22-27	27N	21N	1937	3,4,5	1
Kit Carson	3	14D3	4700	4	27N	16E	1937	4	1
Savage Pass	7	14C4	6000	18	36N	15E	1937	4	1
Powell Pasture	6	15C3	3700	27	27N	14E	1937	4	1
Packers Mdw.	5	14C2	5700	15	38N	15E	1937	2,3,4,5	1
FLATHEAD									
Basin Creek		13-B-14	5000	11	19N	12W	1951	2,3,4,5	1
Holbrook		13-B-13	4530	18	21N	13W	1951	2,3,4,5	1
Trout Lake #2		13-A-12	3600	21	28N	17W	1951	2,3,4,5	1
Twin Creeks		13-B-11	3580	14	26N	16W	1951	2,3,4,5	1
Quintonkon		13-A-13	3800	11	26N	17W	1951	2,3,4,5	1
TONGUE RIVER									
Burgess Ranger Sta.		7-E-4	7900	36	56N	89W	1950	3,4,5	Pd.Obs.
Dome Lake		7-E-5	8800	11	53N	87W	1950	3,4,5	Pd.Obs.
POWDER RIVER									
Soldier Park		7-E-6	8700	36	51N	85W	1950	3,4,5	Pd.Obs.1
Muddy Pass		7-R-7	9700	11	48N	85W	1950	3,4,5	Pd.Obs.1
North Powder		7-E-8	8500	5	47N	85W	1951	3,4,5	Pd.Obs

*Washington Water Power Company

STORAGE IN RESERVOIRS OF MONTANA AND NORTHERN WYOMING
Reservoir Volumes in 1,000's of Acre Feet

Reservoir	Location on or Diversion from	Usable Capacity	Contents This Year May 1 1951	Contents Last Year May 1 1950	May 1 10-Year Average 1940-49
Lake Sewall	Missouri	37.8	20.5	12.2	
Hauser Lake	Missouri	52.1	45.7	34.0	43.9
Holter Reservoir	Missouri	81.9	56.5	68.0	53.1
Fort Peck Res.	Missouri	19,000.0	13,400.0	12,540.0	10,202.0
Ruby Reservoir	Ruby	38.5			
Hebgen Reservoir	Madison River	345.0	261.3	231.4	234.4
Madison Reservoir	Madison River	41.0	29.9	32.8	33.6
Smith River Res.	Smith River	10.7			
Gibson Reservoir	N.Fk. Sun River	105.0	81.7	52.5	71.5
Willow Creek	N.Fk.Sun-Willow Cr.	32.3	27.1	5.9	13.9
Pishkun Reservoir	N.Fk. Sun River	32.0	19.0	24.7	20.3
Lower Two Medicine L.	Two Medicine River	14.0	0	0	
Four Horns Res.	Badger Creek	20.0	8.6	6.3	8.6
Birch Creek Res.	Birch Creek	30.0	30.2	24.9	25.2
Lake Francis Res.	Birch Creek	112.0	102.2	91.4	81.7
Askley Lake	Judith River	5.8		4.4	4.3
Durand Reservoir	N.Fk. Musselshell	7.0		7.0	
Dead Man Basin	Musselshell River	52.5			
Martinsdale Res.	S.Fk. Musselshell	23.1		14.6	10.6
Fresno Reservoir	Milk River	127.2	132.5	60.9	70.5
Nelson Reservoir	Milk Reservoir	66.8	18.5	13.4	33.3
Mystic Lake	W. Rosebud Creek	20.8	1.3	0.6	3.4
Cooney Reservoir	Red Lodge Creek	27.5	16.5	19.0	14.5
Tongue Reservoir	Tongue River	73.9		15.6	16.5
Sherburne Lake Res.	Swiftcurrent Creek	66.1		34.2	
Lake Helena	Missouri River	10.4	7.2	2.7	
YELLOWSTONE RIVER BASIN (Wyoming)					
Buffalo Bill	Shoshone	456.6	236.2	164.3	265.3
Pilot Butte	Wind River	30.1		19.9	21.2
Bull Lake	Wind River	155.0		6.8	52.6
COLUMBIA RIVER BASIN (Montana)					
Georgetown Lake	Flint Creek	31.0	21.4	19.0	24.1
E.Fk.Rock Cr. Res.	E. Fk. Rock Creek	16.0			
W. Fk.Bitterroot Res.	W. Fk. Bitterroot	31.7	20.5	3.5	13.3
Como Lake	Rock Creek	34.8			
Flathead Lake(Sommers)	Flathead River	1,791.0	990.6	826.9	663.1
*Little Bitterroot	Little Bitterroot	37.1	36.1	32.6	11.8
*Dry Fork Reservoirs	Dry Fork Creek	6.7	5.8	6.0	3.9
**Mission Valley 9 Reservoirs	Mission Valley (Flathead River)	105.0	58.8	35.4	48.9

*Comprised of two reservoirs on Little Bitterroot River
*Comprised of two reservoirs on Dry Fork Creek.
**Comprises nine small reservoirs on Mission Valley Indian Irrigation Service Project.

PRECIPITATION DATA FOR MAY 1, 1951
MONTANA

Station	Elevation	1950 Precipitation Oct.	Nov.	Dec.	1951 Precipitation Jan.	Feb.	Mar.	Apr.	Apr. Dept. from Normal	Seasonal Accumulation Precipitation 1950-51	Normal	Depart.
WEST OF DIVIDE												
Butte (Airport)	5533	0.53	1.20	0.59	0.92	0.82	1.01	0.87	- 0.16	5.94	4.19	+ 1.75
Phillipsburg	5280	0.51	1.25	0.64	1.43	1.45	1.85	1.21	+ 0.02	8.40	6.28	+ 2.12
Hamilton	3529	1.78	1.58	0.71	1.21	1.52	1.39	0.36	- 0.51	8.55	5.53	+ 3.02
Fortine	3000	3.46	1.50	1.99	0.97	0.89	1.12	2.04	+ 0.50	11.97	8.99	+ 2.98
West Glacier	3154	5.87	2.35	5.17	4.77	4.88	1.89	1.67	+ 0.17	26.60	16.61	+ 9.99
Summit (Marias)	5213	7.53	6.13	5.88	5.37	6.52	3.66	2.97	+ 0.69	38.06	19.82	+ 18.24
Ovando 1 SW	4101	1.02	2.38	1.63	1.53	1.72	1.12	1.13	+ 0.18	10.53	9.66	+ 0.87
Trout Creek	2485	6.36	3.95	4.67	5.42	6.51	1.96	0.98	- 0.10	29.85	21.45	+ 8.40
Thompson Falls	2435	4.36	2.79	2.25	2.97	3.44	1.03	1.53	+ 0.09	18.37	13.01	+ 5.36
Average (9)		3.48	2.56	2.61	2.73	3.08	1.67	1.42	+ 0.08	17.59	11.73	+ 5.86
CENTRAL DIVISION												
Babb	4300	1.04	1.23	0.85	0.65	1.79	2.03	2.58	+ 0.92	10.17	7.64	+ 2.53
Havre	2488	0.24	0.41	0.32	0.39	0.42	0.54	0.73	- 0.26	3.04	4.62	- 1.58
Great Falls (Airport)	3664	0.03	1.19	0.58	0.41	1.34	1.22	2.50	+ 1.35	7.27	5.38	+ 1.89
Helena (Airport)	3893	0.43	1.50	0.61	0.38	0.24	0.84	1.58	+ 0.46	5.57	4.39	+ 1.18
Lewistown (Airport)	4132	0.74	0.83	1.05	0.17	0.20	0.61	0.83	- 0.44	4.43	4.57	- 0.14
Livingston	4485	0.94	1.05	0.81	0.38	0.40	1.45	1.45	+ 0.13	6.48	5.83	+ 0.65
Wisdom	6058	1.06	1.15	0.48	0.71	0.93	0.53	0.15	- 0.95	5.01	5.67	- 0.66
West Yellowstone	6669	2.88	1.79	1.95	2.28	1.91	2.18	0.92	- 0.92	13.91	14.56	- 0.65
Mystic Lake	6558	0.86	2.37	1.08	2.02	0.17	3.50	1.56	- 1.18	11.56	11.47	+ 0.09
Average (9)		0.91	1.28	0.85	0.82	0.82	1.44	1.37	- 0.09	7.49	7.12	+ 0.37
EASTERN DIVISION												
Malta	2255	0.39	0.18	0.35	0.49	0.52	0.53	0.53	- 0.27	2.99	3.78	- 0.79
Fort Peck	2180	0.24	0.25	0.23	0.48	0.39	0.39	1.08	- 0.61	3.06	3.73	- 0.67
Medicine Lake	1962	0.50	0.10	0.21	0.36	0.49	0.25	1.41	+ 0.52	3.32	3.29	+ 0.03
Circle	2428	0.54	0.18	0.13	0.33	0.50	0.05	0.74	- 0.40	2.47	5.59	- 3.12
Billings	3139	0.83	0.88	0.68	0.70	0.38	0.69	0.64	- 0.66	4.78	5.74	- 0.96
Miles City	2392	0.40	0.52	0.31	0.08	0.27	0.14	0.55	- 0.57	2.27	5.23	- 2.96
Glendive	2076	0.45	E0.16	0.07	0.37	0.42	0.12	0.19	- 0.93	1.78	4.71	- 2.93
Broadus	3026	0.46	0.41	0.40	0.48	0.31	0.60	0.36	- 1.17	3.02	5.29	- 2.27
Average (8)		0.48	0.34	0.30	0.41	0.41	0.35	0.69	- 1.00	2.96	4.67	- 1.71

PRECIPITATION DATA FOR MAY 1, 1951
NORTHERN WYOMING

Station	Elevation	1950 Precipitation Oct.	Nov.	Dec.	1951 Precipitation Jan.	Feb.	Mar.	Apr.	Apr. Dept. from Normal	Seasonal Accumulation Precipitation 1950-51	Normal	Departure
BIG HORN RIVER BASIN												
Cody	4984	.08	1.29	.28	.77	0.09	0.58	1.02	— 0.03	4.02	3.67	+ 0.35
Lovell	3825	.02	.32	.03	.09	T	0.10	0.91	+ 0.29	1.47	2.81	— 0.71
Worland	4061	T	.10	.40	T	0.10	0.30	0.65	— 0.36	1.61	3.35	— 1.74
Sunshine 4 SW	6930	.17	1.04	.29	.37	0.67	0.29	1.03	— 1.67	4.57	7.86	— 3.29
Thermopolis	4336	.19	.80	.21	.07	0.18	0.09	1.18	— 0.93	2.61	5.97	— 3.36
Riverton	4954	.22	.57	.00	.05	0.31	0.45	0.97	— 0.41	2.31	4.13	— 1.82
Dubois	6917	.37	.71	T	.16	0.45	0.80	0.65	— 0.44	2.82	4.07	— 1.25
Average (7)		.15	.68	.17	.22	0.25	0.37	0.92	— 0.51	2.77	4.55	— 1.78
TONGUE RIVER BASIN												
Sheridan	4021	.51	1.05	.58	.55	0.24	1.20	1.41	— 0.51	5.54	6.97	— 1.43
POWDER RIVER BASIN												
Arvada	3680	.22	.31	.06	.16	0.18	0.81	0.27	— 1.02	2.01	4.90	— 2.89
Metz Ranch	5280	.37	.67	.19	.46	0.38	0.43	0.93	— 0.66	3.43	5.05	— 1.62
Gillette	4542	.63	.72	.05	.50	0.25	1.30	0.51	— 1.22	3.96	6.16	— 2.20
Nine Mile Creek	5000	.70	.40	.05	.20	0.50	0.30	--	--	--	4.83	--
Mid West	4850	.83	.47	.28	.23	0.27	0.45	0.80	— 1.01	3.33	6.23	— 2.95
Average (5)		.55	.51	.31	.34	0.32	0.66	0.63	— 0.97	3.18	5.45	— 2.27

MONTANA SNOW SURVEYS, MAY 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches) May 1 1951	Past Records 1950	Past Records 1949	Average Data May 1 Avg.	Average Data May 1 %Avg.	Years of Record	Ground Surface Condition
JEFFERSON RIVER (Rock-Beaverhead)											
Lakeview Ridge	11E3	7400	Apr. 27	15.8	4.9	--	2.4	--	--	2	
Lakeview Canyon	11E4	6930	Apr. 27	25.2	8.2	--	2.2	--	--	2	
(Big Hole)											
Miner Lake	13D7	6720	Apr. 30	12.2	3.4	--	--	--	--	2	
MADISON RIVER											
Hebgen	11E5	6550	May 1	Trace	Trace	8.4	1.2	2.7	--	18	
West Yellowstone	11E7	6700	May 1	15.3	5.1	10.0	4.4	3.4	150	18	
21-Mile	11E6	7150	May 2	31.0	12.5	18.8	12.6	10.2	123	18	
Norris Basin	10E2	7500									
GALLATIN RIVER											
Devil's Slide	10D4	8100	Apr. 29	50.1	18.7	24.5	20.3	21.3	88	17	
Hood Meadow	10D3	6600	Apr. 28	17.4	5.5	8.5	1.7	4.2	131	17	
New World	10D1	6700	Apr. 27	20.2	7.2	10.6	--	--	--	2	
21-Mile	11E6	7150	May 2	31.0	12.5	18.8	12.6	10.2	123	18	
MISSOURI RIVER MAIN STEM											
Chessman Reservoir	12C5	6200	May 2	14.9	3.0	7.8	0.0	1.6	187	16	
Kings Hill	10C1	7950	May 1	52.8	12.8	19.6	12.8	11.6	111	11	
Pipestone Pass	12D1	7200	May 2	29.0	6.3	3.2	1.0	1.8	350	12	
Stemple Pass	12C1	6900	May 3	44.4	11.2	14.2	6.3	5.6	200	17	
Tenmile, Lower	12C2	6250	May 3	20.5	5.1	8.9	0.2	2.2	232	16	
Tenmile, Middle	12C3	6800	May 4	39.2	11.2	16.3	3.5	6.4	175	17	
Tenmile, Upper	12C4	8000	May 4	46.0	14.8	18.8	7.1	10.2	145	16	

Ground Surface Not Frozen

MONTANA SNOW SURVEYS, MAY 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches) May 1 1951	Past Records 1950	Past Records 1949	Average Data May 1 Avg.	Average Data May 1 %Avg.	Years of Record	Ground Surface Condition
MISSOURI RIVER MAIN STEM (Continued)											
(Marias River)											
Marias Pass	12B5	5250	Apr. 27	45.6	19.7	26.3	12.1	9.2	214	17	
Snow Lab. #16	13A9	5200	Apr. 24	57.0	22.0	28.0	17.0	20.4	108	5	
UPPER YELLOWSTONE											
Canyon	10E3	7750									
Cooke City	10D7	7400	May 1	21.6	6.2	6.1	3.6	4.9	126	7	
Lake Camp	10E4	7850	May 1	21.6	6.2	11.9	7.6	7.8	80	6	
Lodgepole, Wyo.	9E1	8200	Apr. 29	41.4	14.8	--	9.9	8.3	180	14	
Lupine	10E1	7300									
LOWER YELLOWSTONE											
(Wind River)											
Brooks Lake #3	10F2	9200	Apr. 30	80.0	30.2	33.4	22.4	22.7	133	16	
Burroughs Creek	9F6	8800	Apr. 30	59.0	25.3	17.7	11.2	14.7	172	3	
Dinwoodie	9F10	10000	May 3	56.0	18.5	17.5	11.1	15.7	118	3	
Dry Creek	9F9	9500	May 3	36.0	11.5	10.6	3.9	8.7	132	3	
Du Noir	9F2	8750	May 2	33.0	11.4	11.2	1.6	6.9	165	11	
Geyser Creek	9F3	8500	May 1	30.0	10.3	7.8	0.0	6.0	172	3	
Hobbs Park	9G2	10000	May 6	65.3	25.8	30.3	21.3	25.8	100	3	
Little Warm	9F4	9500	May 1	73.0	25.9	22.1	13.8	20.6	126	3	
Mosquito Park	9G3	9500	May 6	25.2	8.9	14.2	7.8	8.4	106	7	
Sheridan	9F1	7500	Apr. 30	16.0	4.6	3.4	0.0	1.8	225	12	
St. Lawrence	9F11	9000	Apr. 28	24.6	7.2	9.9	5.2	8.0	90	8	
T-Cross Ranch	9F5	8000	Apr. 28	19.0	7.0	5.5	0.0	3.0	234	10	
Trout Creek	9G1	8400	May 6	No Snow		11.1	0.0	--	--	3	
*Togwotee Pass	9F1	9600	May 1	92.0	40.4	29.5	33.2	34.4	120	3	
*Black Rock	10F3	8600	May 1	70.0	28.3	27.6	--	--		2	
*Yellow Jacket	10F5	6775	Apr. 30	No Snow							

Ground Surface Not Frozen

* Adjacent Basin

MONTANA SNOW SURVEYS, MAY 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches) May 1 1951	Past Records 1950	Past Records 1949	Average Data May 1 Avg.	Average Data May 1 %Avg.	Years of Record	Ground Surface Condition
POPO AGIE RIVER											
Blue Ridge	8G2	9500	Apr. 26	41.5	13.5	19.8	11.5	12.2	111	12	
Grannier Meadows	8G4	9000	Apr. 26	40.5	12.5	23.3	13.0	13.8	91	15	
Larsen Creek	9G4	9000	Apr. 27	Not measured							
Sawmill Glade	8G1	8500	Apr. 26	13.2	5.0	4.1	1.0	5.8	86	12	
South Pass	8G3	9000	Apr. 26	45.0	14.9	23.8	13.0	13.4	111	12	
BIG HORN RIVER (Wyoming)											
Beavers Mill	9F8	8000									
Owl Creek	8F1	8700									
Tensleep R. S.	7E3	8300	Apr. 30	19.5	5.5	8.5	1.5	4.4	125	16	
Timber Creek	9E2	9000	Apr. 27	23.9	5.8	6.7	4.8	5.5	106	3	
Ranger Creek	7E1	8800	May 1	27.0	6.2	8.4	6.7	6.5	96	15	
Wood River	9E7	8000	Apr. 29	18.0	5.4	5.0	2.3	3.8	142	11	
SHOSHONE RIVER											
East Entrance	10E6	7000									
Sylvan Pass	10E5	7100									
TONGUE RIVER											
Burgess Junction	7E4	7900									
Big Goose	7E2	7700									
Dome Lake	7E5	9000									
POWDER RIVER											
North Powder	7E8	8500									
Muddy Pass	7E7	9700	May 2	33.5	7.4	9.5	--	--	--	2	
Sour Dough	6F1	8500	May 1	24.9	4.9	6.0	0.0	5.2	94	15	
Soldier Park	7E6	8700									

Ground Surface Not Frozen

MONTANA SNOW SURVEYS, MAY 1, 1951

MISSOURI BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches) May 1 1951	Past Records 1950	Past Records 1949	Average Data May 1 Avg.	Average Data May 1 %Avg.	Years of Record	Ground Surface Condition
COLUMBIA RIVER DRAINAGE IN MONTANA											
KOOTENAI											
Baree Mountain	15B1	6000	May 2	96.4	40.4	68.1	51.1	40.0	101	15	Ground Not Frozen
Blue Bird Basin	14A1	6800	May 1	112.5	44.4	53.7	36.7	35.5	125	13	
Brush Creek	14A4	5000	May 1	34.6	8.6	17.1	--	5.9	146	8	
Fernie	Canada	3500	Apr. 30	5.3	2.1	7.7	0	2.9	72	5	
New Fernie	Canada	4100	Apr. 30	26.0	11.1	--	--	--	--	1	
Ferguson	Canada	3000	Apr. 30	25.8	13.6	18.9	11.7	15.8	86	5	
Gray Creek	Canada	5100	Apr. 28	53.5	19.7	24.5	18.4	21.0	94	4	
Marble Canyon	Canada	5000	Apr. 29	44.0	19.1	16.7	10.2	13.0	147	4	
Red Mountain Mont.	15A1	6000	May 2	58.9	19.9	31.1	16.3	15.2	130	14	
Sandon	Canada	3500	May 1	No Snow		19.9	0.0	3.1	-	5	
Sinclair Pass	Canada	4500	Apr. 29	6.2	3.1	3.2	0.2	1.0	-	5	
Smith Creek	16A1	4800	Apr. 30	81.0	38.7	55.8	40.2	34.8	110	13	
Sullivan Mine	Canada	5100	May 1	35.6	12.9	16.6	7.9	11.5	112	4	
Upper Elk River	Canada	4400									

MONTANA SNOW SURVEYS, MAY 1, 1951

COLUMBIA RIVER BASIN

DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1951	Snow Depth (In.) 1951	Water Content (Inches) May 1 1951	Past Records 1950	Past Records 1949	Average Data May 1 Avg.	Average Data May 1 %Avg.	Years of Record	Ground Surface Condition
FLATHEAD RIVER											
Big Creek	13B3	6750	May 3	118.1	48.0	60.0	22.2	45.4	106	3	
Brush Creek	14A4	5000	May 1	34.6	8.6	17.1	--	5.9	146	8	
Cattle Queen	13A1	4700	Apr. 27	74.6	31.7	11.6	21.5	16.7	190	7	
Desert Mountain	13A2	5600	Apr. 30	36.0	14.8	21.7	10.8	9.9	150	15	
Hell Roaring Divide	14A3	5700	Apr. 30	54.8	24.0	37.4	26.7	27.1	90	10	
Limestone Pass	13B8	7600	May 3	114.0	40.3	29.0	--	--	--	2	
Logan Creek	14A5	4300	Apr. 30	3.4	1.0	7.1	3.4	1.8	--	13	
Marias Pass	13A5	5250	Apr. 27	45.6	19.7	26.3	12.1	9.2	214	17	
North Fork Jocko	13B7	6330	May 5	91.2	43.4	59.6	--	35.8	121	4	
Rainy Lake	13B6	4300	Apr. 30	No Snow		10.2	T	--	--	5	
Snow Lab. #16	13A9	5200	Apr. 24	57.0	22.0	28.0	17.0	20.4	108	5	
Spotted Bear Mt.	13B2	7000	Apr. 29	15.3	6.8	18.1	--	--		2	
Strawberry Lake	13B10	6500	Apr. 30	73.0	47.9	58.8	35.4	47.3	101	3	
Trinkus Lake	13B1	6500	Apr. 30	81.6	32.9	53.1	36.5	41.2	80	3	
Trout Lake #2	13A12	3600	Apr. 30	16.7	5.5	--	--	--	--	1	
Upper Holland Lake	13B5	7000	Apr. 27	72.0	33.5	--	--	--	--	1	
Basin Creek	13B14	5000	May 3	11.3	3.1	--	--	--	--	1	
Holbrook	13B13	4530	May 3	6.4	1.4	--	--	--	--	1	
Quintonkon	13A13	3800	Apr. 30	10.9	4.6	--	--	--	--	1	
Twin Creeks	13B11	3580	Apr. 28	No Snow							
UPPER CLARK FORK											
Chessman Res.	12C5	6200	May 2	14.9	3.0	7.8	0.0	1.6	187	16	
North Fork Jocko	13B7	6330	May 5	91.2	43.4	59.6	--	35.8	121	4	
Pipestone Pass	12D1	7200	May 2	29.0	6.3	3.2	1.0	1.8	350	12	
Rainy Lake	13B6	4200	Apr. 30	No Snow		10.2	T	--	--	5	
Stemple Pass	13C1	6900	May 3	44.4	11.2	14.2	6.3	5.6	200	17	
Tenmile, Lower	12C2	6250	May 3	20.5	5.1	8.9	0.2	2.2	232	16	
El Dorado Mine	13C9	7800	May 5	71.0	27.2	37.2	--	--	--	2	
Game Pass		8100	May 5	76.0	29.0	--	--	--	--	1	
Gold Creek Lake	13C8	7200	May 5	48.5	19.6	29.0	16.5	21.7	90	3	

Ground Not Frozen

MONTANA SNOW SURVEYS, MAY 1, 1951

COLUMBIA RIVER BASIN

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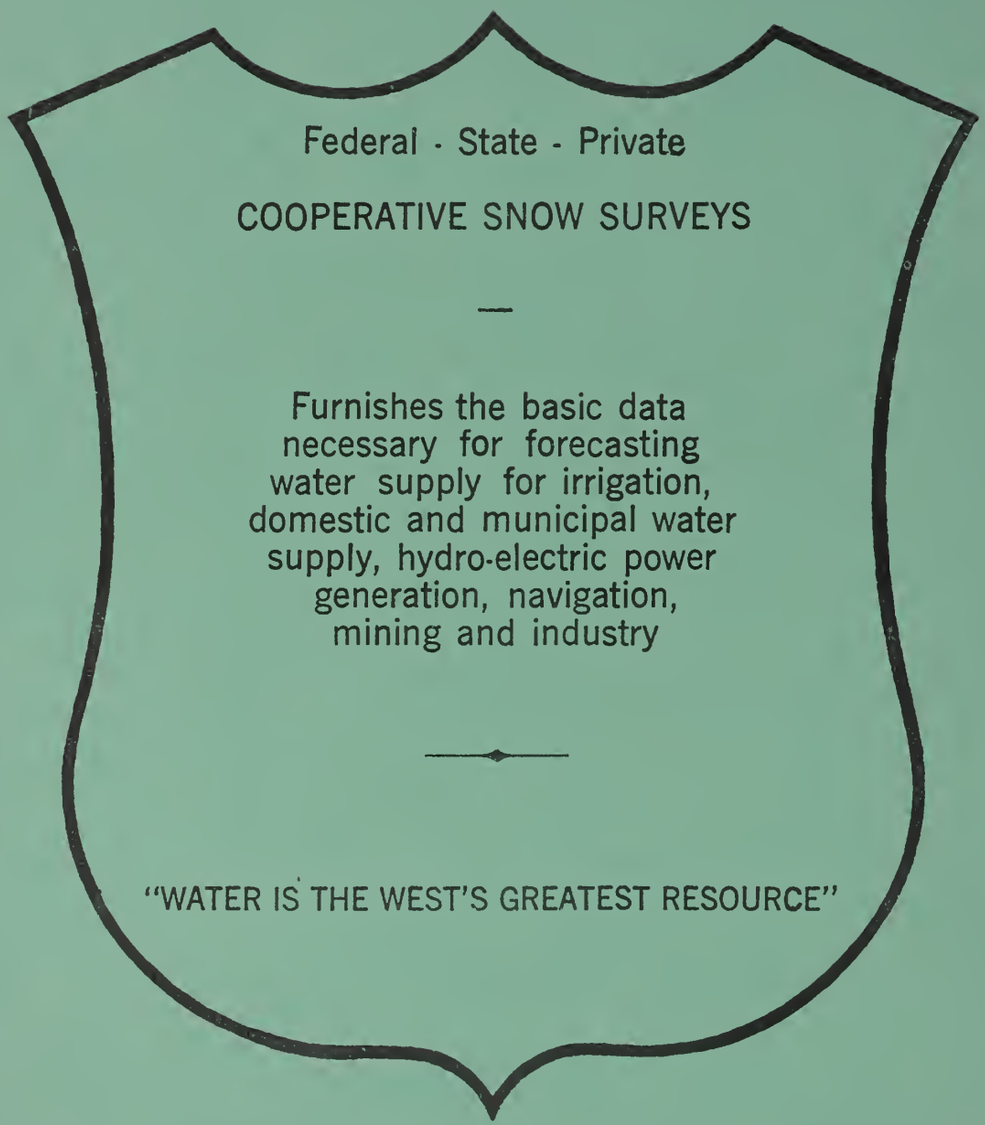
UPPER CLARK FORK (Continued)											
Tenmile, Upper	12C3	6800	May 4	46.0	14.8	18.8	7.1	10.2	145	16	
*Lookout	15B2	5250	May 1	67.0	27.5	45.1	36.6	33.0	68	13	
PEND OREILLE											
Baree Mt.	13B1	6000	May 2	96.4	40.4	68.1	51.1	40.0	101	15	
*Mosquito Ridge	16A4	5600	May 2	65.0	26.8	47	34.1	28.1	95	13	
BITTERROOT											
Gibbons Pass	13D2	7100	May 1	60.5	23.6	28.3	22.9	19.4	122	16	

Ground Not Frozen

* Adjacent Basin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